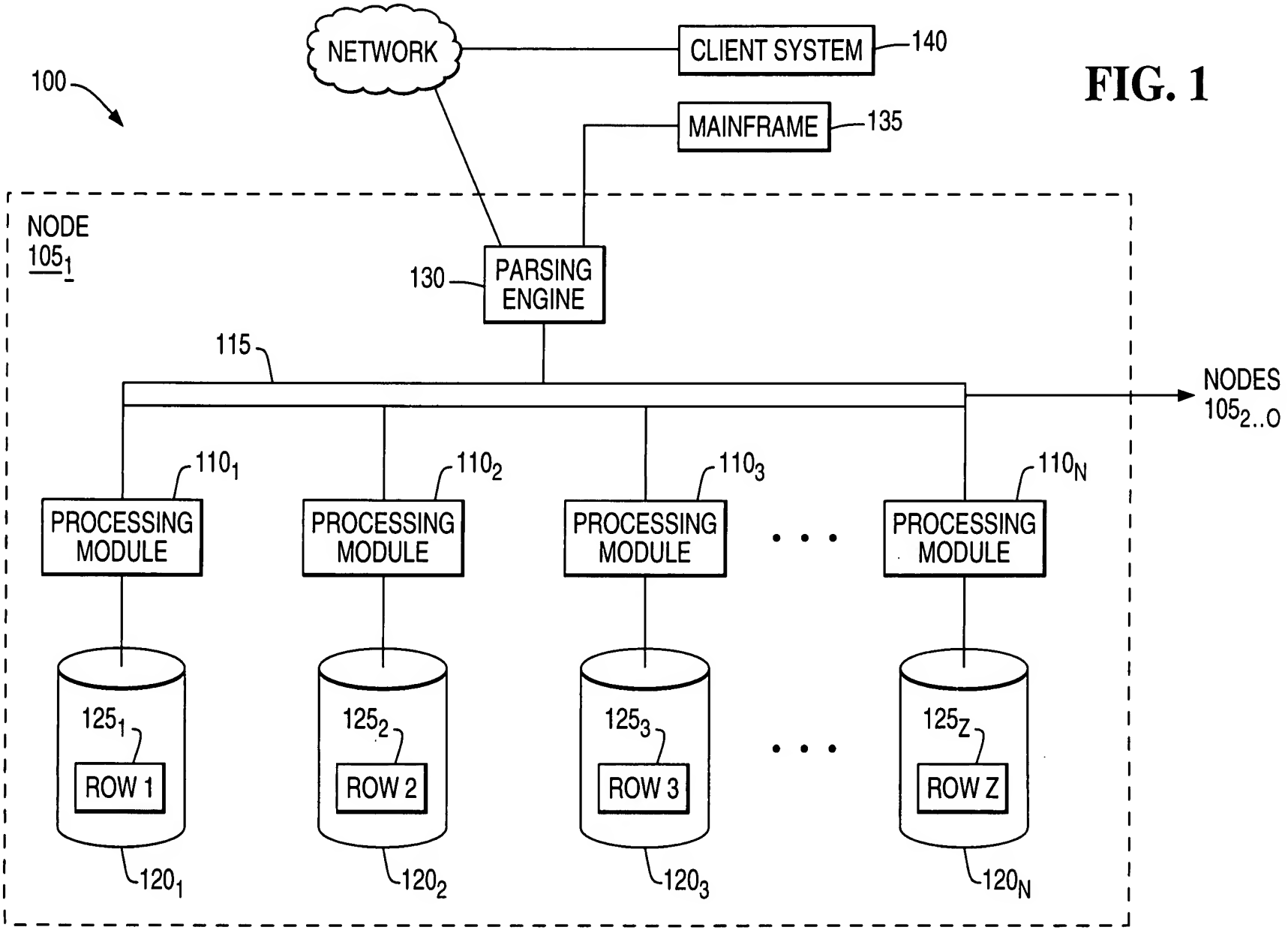

NETWORK
CLIENT SYSTEM
140
100
MAINFRAME
135
NODE
105_1
130
PARSING ENGINE
115
NODES
$105_{2..O}$
110_1
110_2
110_3
110_N
PROCESSING MODULE
PROCESSING MODULE
PROCESSING MODULE
PROCESSING MODULE
125_1
125_2
125_3
125_Z
ROW 1
ROW 2
ROW 3
ROW Z
120_1
120_2
120_3
120_N

FIG. 1

FIG. 2

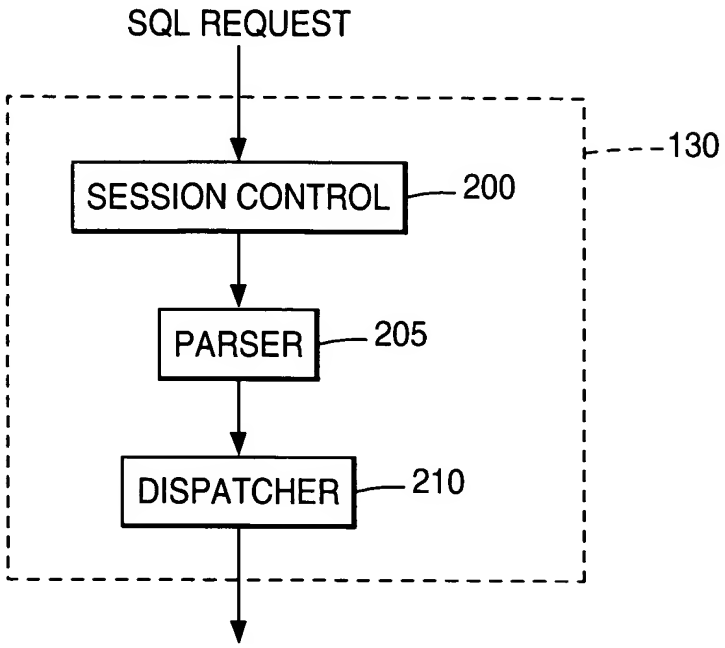

SQL REQUEST
130
SESSION CONTROL
200
PARSER
205
DISPATCHER
210

FIG. 3

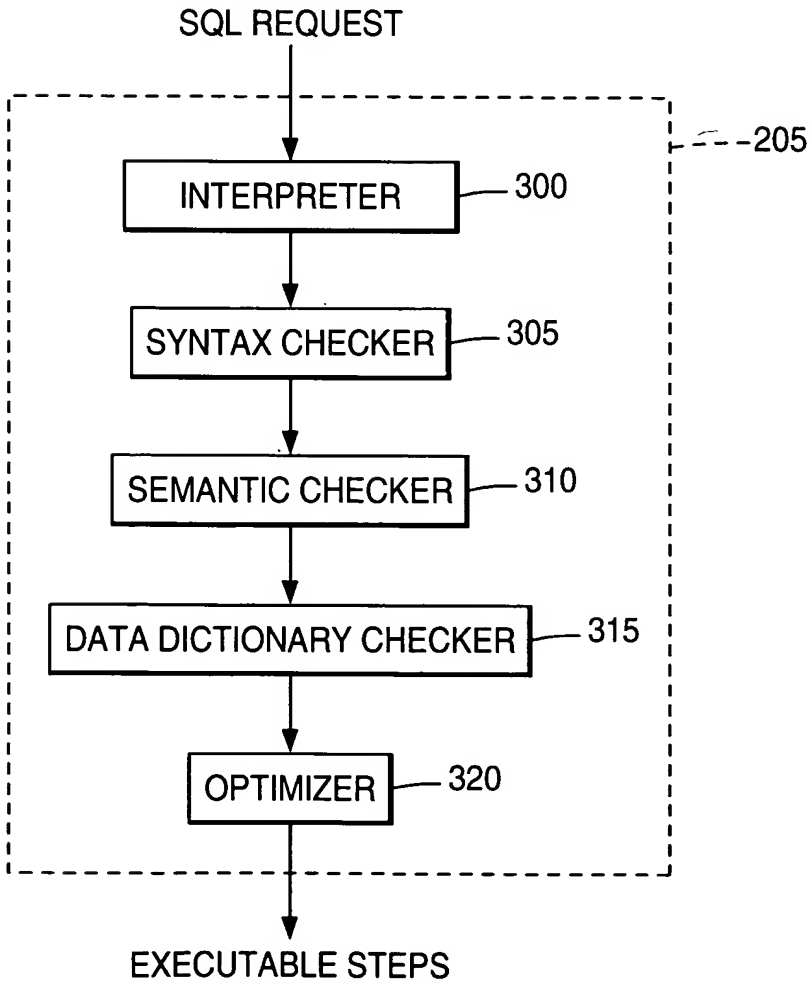

SQL REQUEST
205
INTERPRETER
300
SYNTAX CHECKER
305
SEMANTIC CHECKER
310
DATA DICTIONARY CHECKER
315
OPTIMIZER
320
EXECUTABLE STEPS

FIG. 4

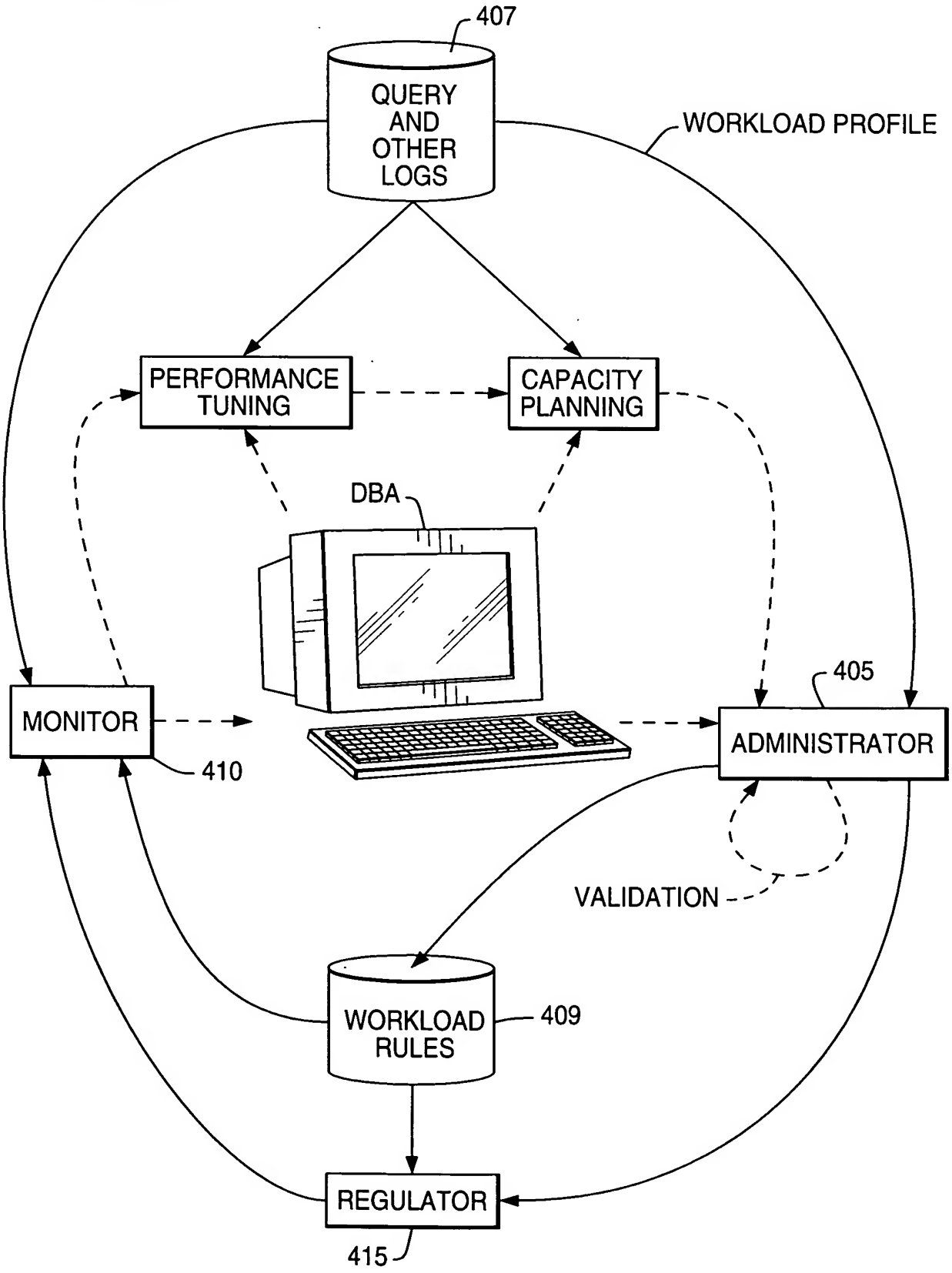

407
QUERY AND OTHER LOGS
WORKLOAD PROFILE
PERFORMANCE TUNING
CAPACITY PLANNING
DBA
MONITOR
410
405
ADMINISTRATOR
VALIDATION
WORKLOAD RULES
409
REGULATOR
415

FIG. 5

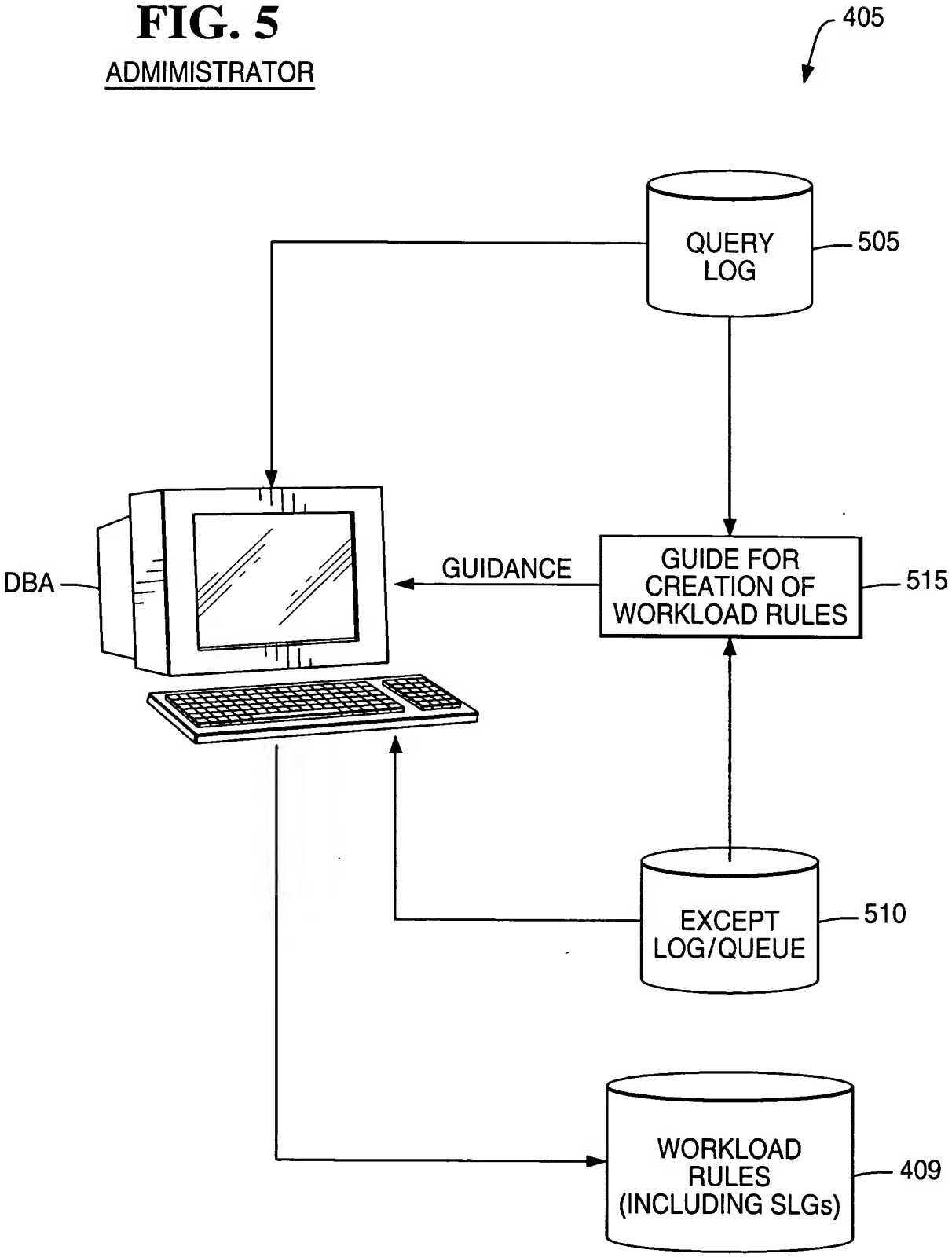

ADMIMISTRATOR
405
QUERY LOG
505
DBA
GUIDANCE
GUIDE FOR CREATION OF WORKLOAD RULES
515
EXCEPT LOG/QUEUE
510
WORKLOAD RULES (INCLUDING SLGs)
409

FIG. 6

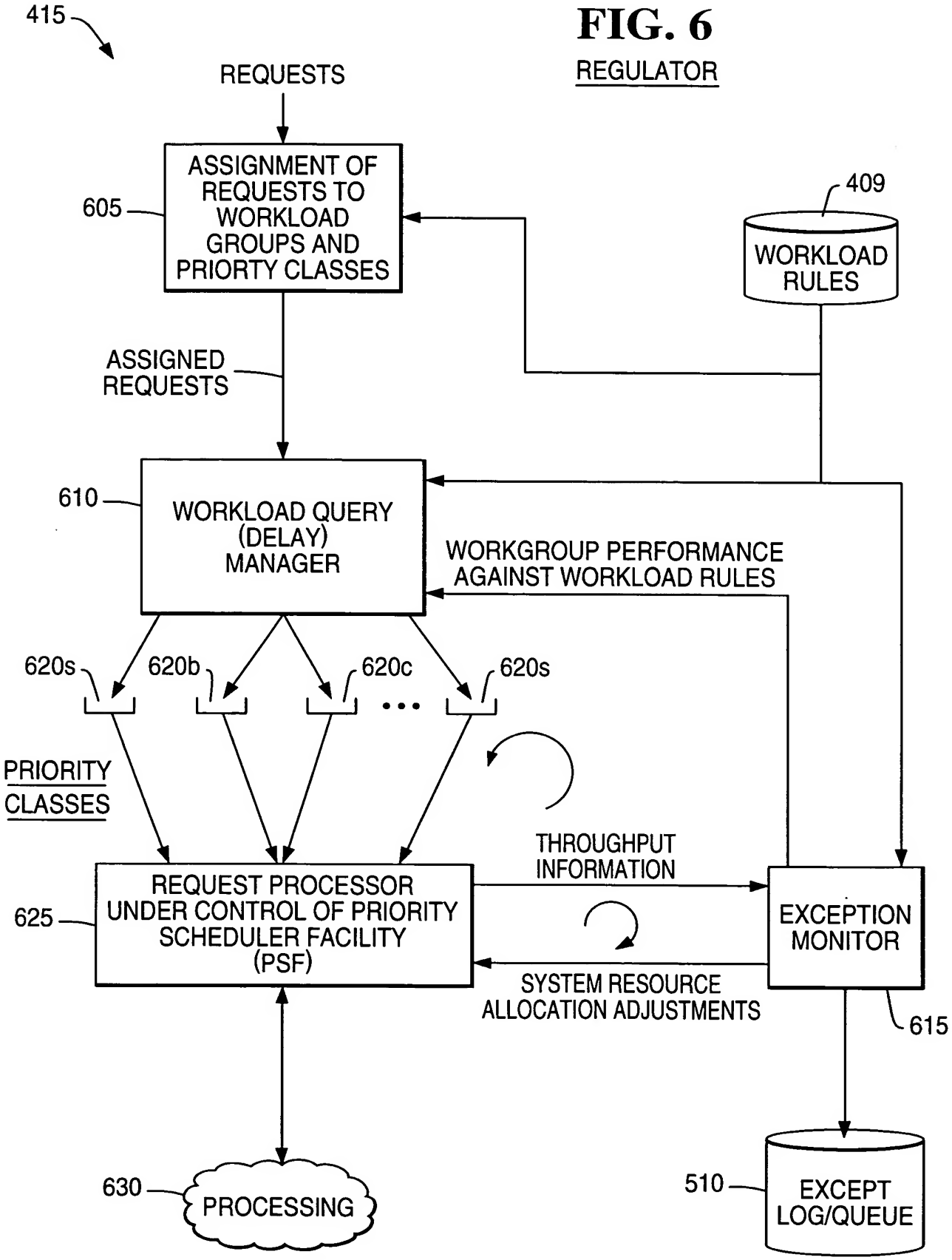

415
REGULATOR
REQUESTS
ASSIGNMENT OF REQUESTS TO WORKLOAD GROUPS AND PRIORTY CLASSES
605
409
WORKLOAD RULES
ASSIGNED REQUESTS
610
WORKLOAD QUERY (DELAY) MANAGER
WORKGROUP PERFORMANCE AGAINST WORKLOAD RULES
620s
620b
620c
620s
PRIORITY CLASSES
THROUGHPUT INFORMATION
REQUEST PROCESSOR UNDER CONTROL OF PRIORITY SCHEDULER FACILITY (PSF)
625
EXCEPTION MONITOR
SYSTEM RESOURCE ALLOCATION ADJUSTMENTS
615
630
PROCESSING
510
EXCEPT LOG/QUEUE

FIG. 7

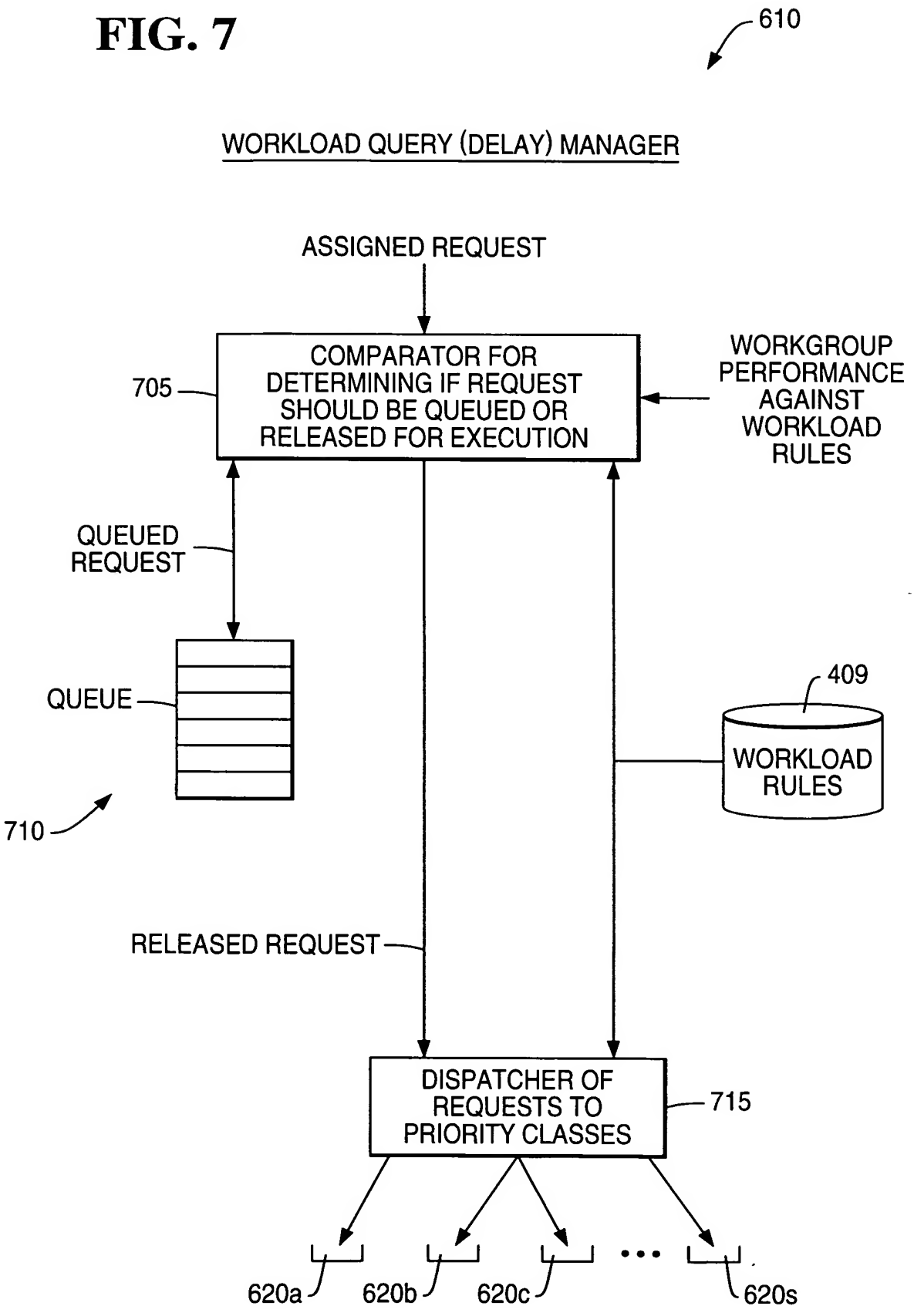

610
WORKLOAD QUERY (DELAY) MANAGER
ASSIGNED REQUEST
COMPARATOR FOR DETERMINING IF REQUEST SHOULD BE QUEUED OR RELEASED FOR EXECUTION
705
WORKGROUP PERFORMANCE AGAINST WORKLOAD RULES
QUEUED REQUEST
QUEUE
710
409
WORKLOAD RULES
RELEASED REQUEST
DISPATCHER OF REQUESTS TO PRIORITY CLASSES
715
620a
620b
620c
620s

FIG. 8

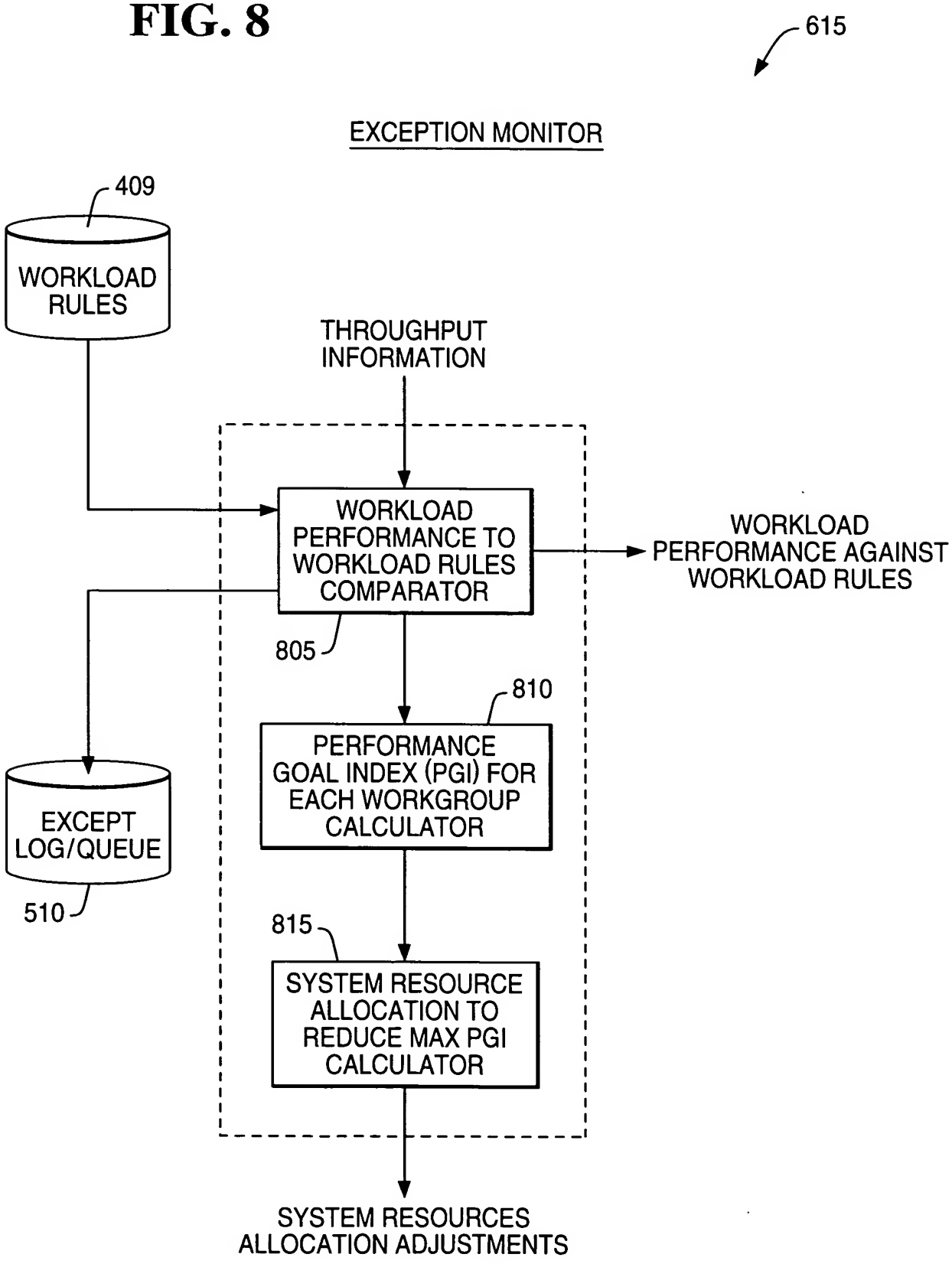

615
EXCEPTION MONITOR
409
WORKLOAD RULES
THROUGHPUT INFORMATION
WORKLOAD PERFORMANCE TO WORKLOAD RULES COMPARATOR
WORKLOAD PERFORMANCE AGAINST WORKLOAD RULES
805
810
PERFORMANCE GOAL INDEX (PGI) FOR EACH WORKGROUP CALCULATOR
EXCEPT LOG/QUEUE
510
815
SYSTEM RESOURCE ALLOCATION TO REDUCE MAX PGI CALCULATOR
SYSTEM RESOURCES ALLOCATION ADJUSTMENTS

FIG. 9

Workloads for [8AM - 10AM Reg. Weekdays ▼]

WORKLOAD GROUP NAME	CLASSIFY & EXCEPTION CRITERIA	S. L. Goals: DESIRED RESPONSE & SERVICE LEVEL	S. L. Goal: ENFORCEMENT PRIORITY	OPERATING WINDOW	ARRIVAL RATE	INITIATION INSTRUCTION	EXCEPTION PROCESSING
Inventory Tactical	Criteria	<= 1 sec @ 95%	Tactical	8AM - 6PM	75/sec	Expedite	Inventory Long Qry
CRM Tactical	Criteria	<= 3 sec @ 80%	Tactical	6AM - 6PM	25/sec	Expedite	Crm Analytics
Call Ctr Tactical	Criteria	<= 2 sec @ 90%	Tactical	7AM - 12PM	200/sec	Expedite	Call Ctr Reports
Sales Short Qry	Criteria	< 10 sec @ 90%	Priority	7AM - 12PM	500/hour	Exec	Log
CRM Short Qry	Criteria	< 2 min @ 75%	Normal	9AM - 3PM	35/hour	Delay	Log
SuperUser/Short DBA	Criteria	< 5 min @ 50%	Normal	8AM - 10AM	15/hour	Exec	none
Inventory Long Qry	Criteria	< 30 min @ 80%	Normal	all	3/hour	Exec	Alert
Call Ctr Reports	Criteria	< 20 min @ 80%	Normal	all	0.2/hour	Exec	none
Sales Cont Loads	Criteria	per arrival rate	Tactical	7AM - 11AM	5000/sec	Expedite	none
Inventory Batch	Criteria	none	Backgrnd	10PM - 9AM	unknown	Delay	Abort
CRM Analytics	Criteria	none	Backgrnd	10PM - 10AM	unknown	Exec	Abort
Sales Long Qry	Criteria	< 8 Hours @ 50%	Backgrnd	all	unknown	Exec	Abort
Development	Criteria	none	Backgrnd	8AM - 8PM	unknown	Exec	

FIG. 10

Operating Windows for Workload [Inventory Tactical ▼]

	S. L. Goals					
WORKLOAD DIFINITION NAME	DESIRED RESPONSE & SERVICE LEVEL	ENFORCEMENT PRIORITY	OPERATING WINDOW	ARRIVAL RATE	INITIATION INSTRUCTION	EXCEPTION PROCESSING
[Inventory Tactical]	<= 1 sec @ 95%	2	8AM - 6PM	75/sec	Expedite	[Inventory Long Qry]
		3	6PM - 12AM	20/sec	Expedite	[Inventory Long Qry]
		6	12AM - 8AM	100/hour	Exec	Abort

FIG. 11

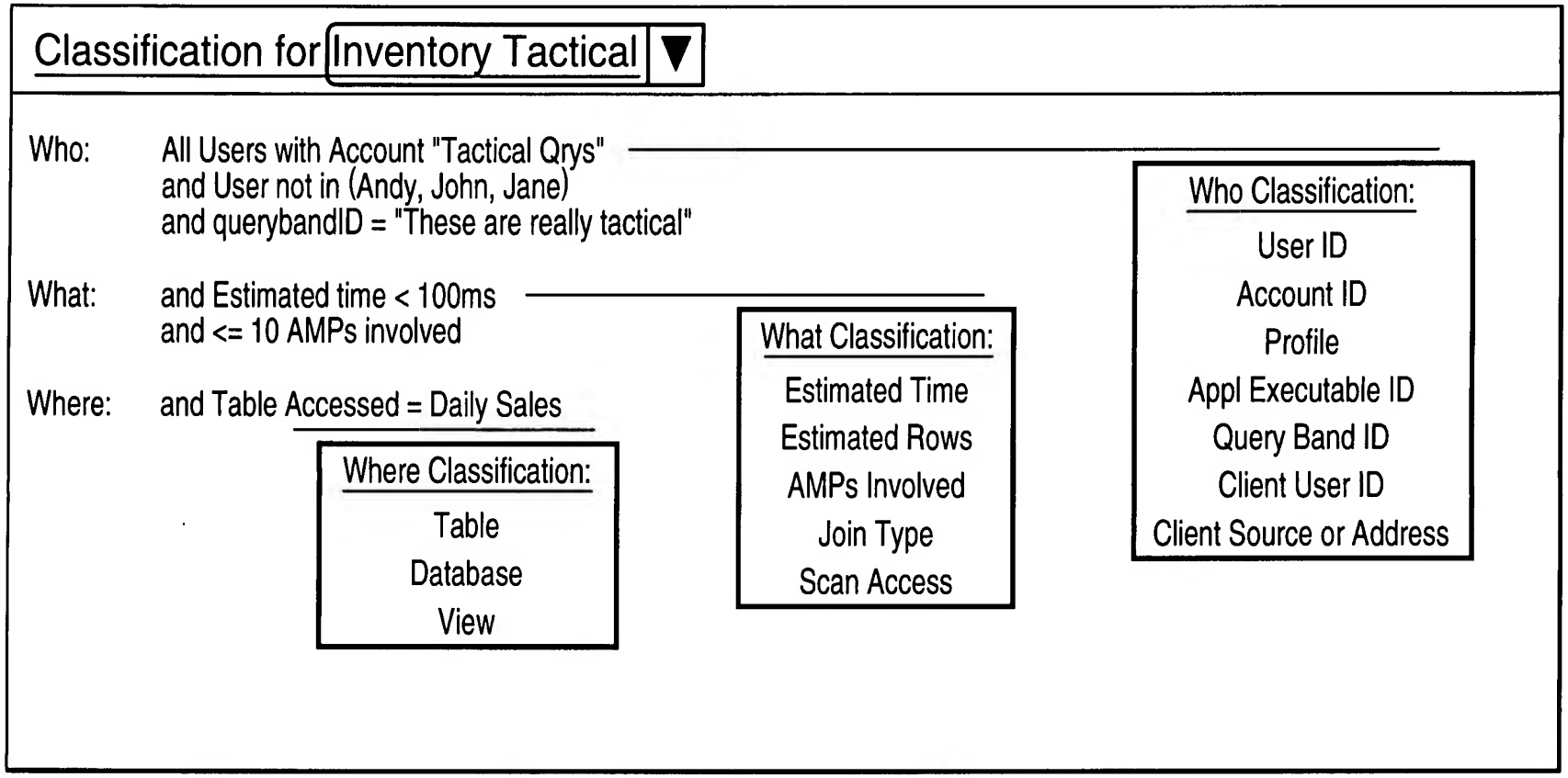

Classification for Inventory Tactical
Who:
All Users with Account "Tactical Qrys"
and User not in (Andy, John, Jane)
and querybandID = "These are really tactical"
What:
and Estimated time < 100ms
and <= 10 AMPs involved
Where:
and Table Accessed = Daily Sales
Where Classification:
Table
Database
View
What Classification:
Estimated Time
Estimated Rows
AMPs Involved
Join Type
Scan Access
Who Classification:
User ID
Account ID
Profile
Appl Executable ID
Query Band ID
Client User ID
Client Source or Address

FIG. 12

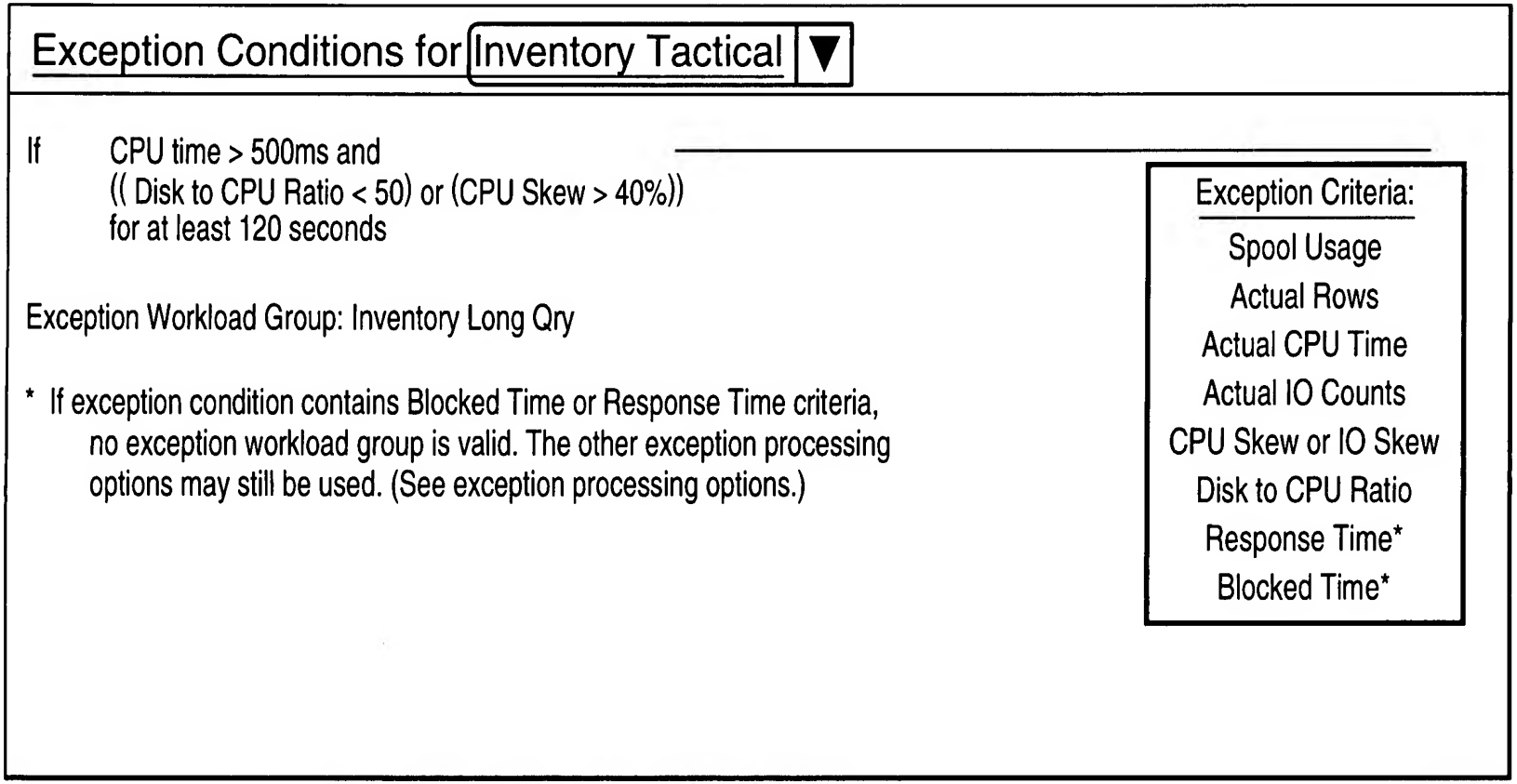

Exception Conditions for Inventory Tactical
If CPU time > 500ms and
((Disk to CPU Ratio < 50) or (CPU Skew > 40%))
for at least 120 seconds
Exception Workload Group: Inventory Long Qry
* If exception condition contains Blocked Time or Response Time criteria, no exception workload group is valid. The other exception processing options may still be used. (See exception processing options.)
Exception Criteria:
Spool Usage
Actual Rows
Actual CPU Time
Actual IO Counts
CPU Skew or IO Skew
Disk to CPU Ratio
Response Time*
Blocked Time*

FIG. 13

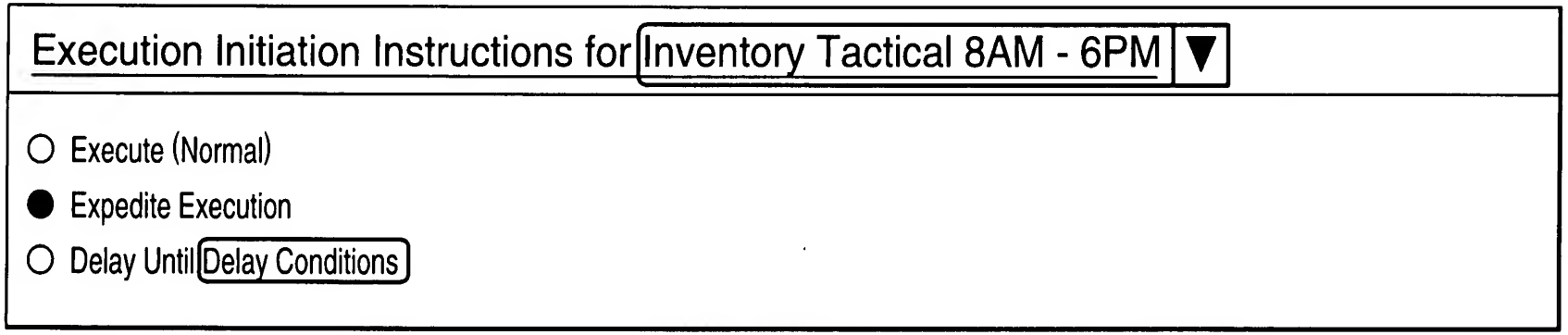

Execution Initiation Instructions for
Inventory Tactical 8AM - 6PM
Execute (Normal)
Expedite Execution
Delay Until
Delay Conditions

FIG. 14

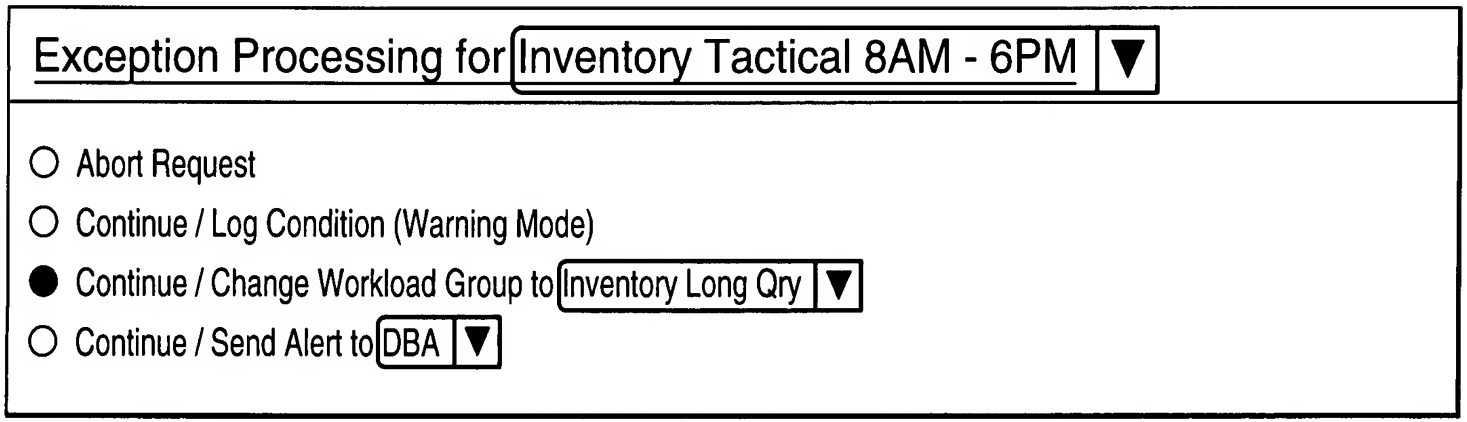
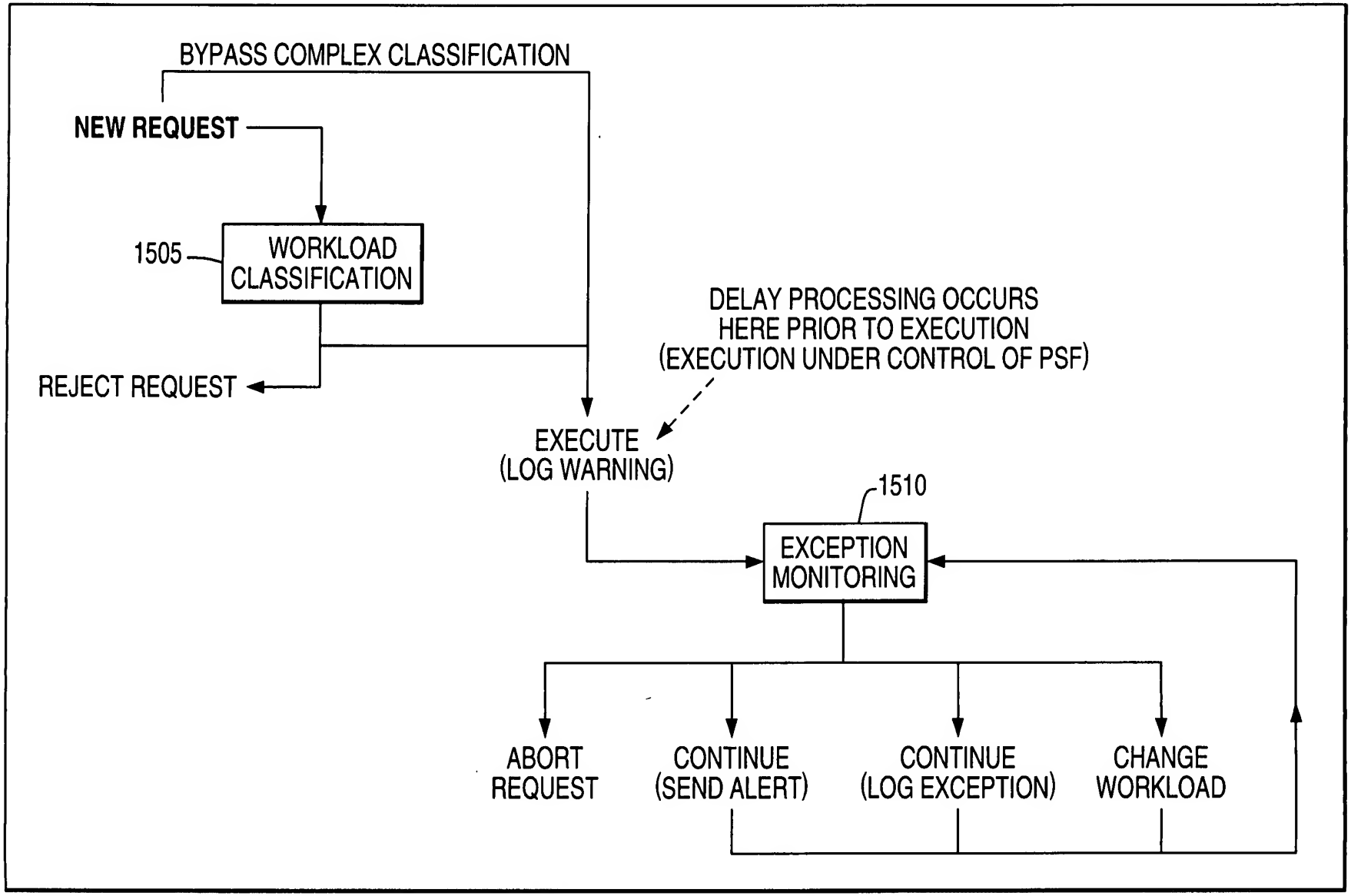

Exception Processing for
Inventory Tactical 8AM - 6PM
Abort Request
Continue / Log Condition (Warning Mode)
Continue / Change Workload Group to
Inventory Long Qry
Continue / Send Alert to
DBA

FIG. 15


BYPASS COMPLEX CLASSIFICATION
NEW REQUEST
1505
WORKLOAD CLASSIFICATION
REJECT REQUEST
DELAY PROCESSING OCCURS HERE PRIOR TO EXECUTION (EXECUTION UNDER CONTROL OF PSF)
EXECUTE (LOG WARNING)
1510
EXCEPTION MONITORING
ABORT REQUEST
CONTINUE (SEND ALERT)
CONTINUE (LOG EXCEPTION)
CHANGE WORKLOAD